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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/519,899

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Xiangjun Wang

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EXAMINER

ZIMMERMAN, JOSHUA D

ART UNIT

PAPER NUMBER

2854

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/519,899

Applicant(s)

WANG, XIANGJUN

Examiner

Joshua D. Zimmerman

Art Unit

2854

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 May 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,5,6,8-11,13 and 14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,5,6,8-11,13 and 14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1, 5, 8 and 9 are rejected under 35 U.S.C. 102(e) as being anticipated by Hammond Cunningham et al. (US 2004/0086709).

2. Regarding claim 1, Hammond Cunningham et al. teach "a method for patterning a device layer using a patterned stamp, comprising the steps of:

(a) providing a substrate (paragraph 61, paragraph 64 line 14);

(b) bringing the patterned stamp into contact with the substrate (this is an inherent part of the stamping process of paragraph 64, line 13) so that the surface energy of the substrate is modified in accordance with the pattern (paragraph 64, lines 14-17);

(c) removing the patterned stamp from the substrate (this is an inherent part of the stampings process of paragraph 64, line 13);

(d) depositing a solution of a device layer on the substrate after the patterned stamp has been removed (paragraph 64, lines 14-17); whereby the surface energy of the substrate determines the deposition pattern of the device layer (last two sentences of paragraph 5; first and last sentences of paragraph 8)."

While Hammond Cunningham et al. do not specifically discuss the effects of the stamping process on the topography of the surface of the substrate, one having ordinary skill in the art would recognize that the topography is inherently not changed by the stamping process of Hammond Cunningham et al. since it is only used to chemically modify the surface of the stamp, and not physically change the surface of the substrate.

Regarding claim 5, Hammond Cunningham et al. further teach "depositing the device layer by spin coating or inkjet printing (paragraph 73)."

Regarding claim 8, Hammond Cunningham et al. further teach "wherein in step (b) the surface energy in step (b) of any portion of the surface of the substrate that is in contact with the pattern stamp is modified (last two sentences of paragraph 5; first and last sentences of paragraph 8; paragraph 64, lines 14-17)."

Regarding claim 9, Hammond Cunningham et al. teach that, in one embodiment, a polystyrene substrate can be used (paragraph 63).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hammond Cunningham et al. in view of AAPA.

Regarding claim 6, Hammond Cunningham et al. teach all that is claimed, but fail to specifically teach the type of solvent used. However, AAPA teaches that when depositing light emitting polymers, a non-polar solvent is used (paragraph 56). Therefore, it would have been obvious to one having ordinary skill in the art to use a solvent "selected from the group consisting of xylene, ortho-xylene, toluene, benzene, mesitylene, chloroform, dichloromethane, and mixtures thereof" in order to effectively deposit a light-emitting polymer onto the substrate.

4. Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hammond Cunningham et al.

Regarding claim 10, Hammond Cunningham et al. teach that, in one embodiment, a polystyrene substrate can be used (paragraph 63). However, Hammond Cunningham et al. fail to teach the use of the specific polymer. However, Hammond Cunningham et al. teach an alternate embodiment wherein patterned conducting polymer films are created, "wherein the substrate comprises a polymer (paragraph 72)," and, "wherein the polymer is poly (3,4-ethylenedioxythiophene) or polyaniline (paragraph 72)." It would have been obvious to one of ordinary skill in the art at the time of the invention to use the alternate method of Hammond Cunningham et al. in order to create a patterned conducting polymer film, such as an OLED.

Regarding claim 11, Hammond Cunningham et al. further teach "wherein the substrate is charged (paragraph 72, paragraph 113)."

5. Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hammond Cunningham et al. in view of Bearinger et al. (US 2003/0215723).

Regarding claim 13, Hammond Cunningham et al. teach “a method for patterning a device layer using a patterned stamp, comprising the steps of:

- (a) providing a substrate (paragraph 61, paragraph 64 line 14);
- (b) bringing the patterned stamp into contact with the substrate (this is an inherent part of the stamping process of paragraph 64, line 13) so that the surface energy of the substrate is modified in accordance with the pattern (paragraph 64, lines 14-17);
- (c) removing the patterned stamp from the substrate (this is an inherent part of the stampings process of paragraph 64, line 13);
- (d) depositing a solution of a device layer on the substrate after the patterned stamp has been removed (paragraph 64, lines 14-17); whereby the surface energy of the substrate determines the deposition pattern of the device layer (last two sentences of paragraph 5; first and last sentences of paragraph 8).”

Hammond Cunningham et al. fail to teach “ wherein the patterned stamp is used as a mask in step (b) and step (b) includes subjecting any portion of the surface of the substrate that is not in contact with the patterned stamp to a surface energy modifying process.” However, Bearinger et al. teach a method of patterning a surface by exposing the surface through a stamp, while said stamp is in contact with the surface, in order to modify the surface for patterning (paragraphs 27 and 28).” Therefore, it would have been obvious to one having ordinary skill in the art to use the method of Bearinger et al.

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in the method of Hammond Cunningham et al. in order to modify the surface of the substrate so it could be patterned.

Regarding claim 14, Bearinger et al. further teach "wherein the surface energy modifying process includes a step of exposing any portion of the surface of the substrate that is not in contact with the patterned stamp to UV radiation (paragraph 28)."

Response to Arguments

6. Applicant's arguments filed 5/29/07 have been fully considered but they are not persuasive.

7. Applicant's argument that the method of Hammond Cunningham et al. changes the topography of the substrate is found to be in error. As claimed, the method of applicant requires that the topography of the surface *of the substrate* (emphasis added) be unchanged. The quoted sections of Hammond Cunningham et al. serve only to show that a multilayer is transferred to the substrate, which, at best, only changes the topography of the surface *of the stamp*, not the substrate. Thus, the rejection as outlined above is maintained.

8. The affidavit and evidence submitted by applicant have been fully considered. While conception has been shown prior to April 19, 2002, the evidence submitted is deemed insufficient to prove diligence from April 19, 2002 to July 9, 2002. Merely asserting that diligence was present is not a sufficient showing of diligence. See MPEP 2138.06. Therefore, the rejection is maintained.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua D. Zimmerman whose telephone number is 571-272-2749. The examiner can normally be reached on M-R 8:30A - 6:00P, Alternate Fridays 8:30A-5:00P.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on 571-272-2258. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Joshua D Zimmerman
Examiner
Art Unit 2854

jdz


JUDY NGUYEN
SUPERVISORY PATENT EXAMINER